



# Esophageal Cancer

**SANFORD**<sup>®</sup>  
CANCER CENTER



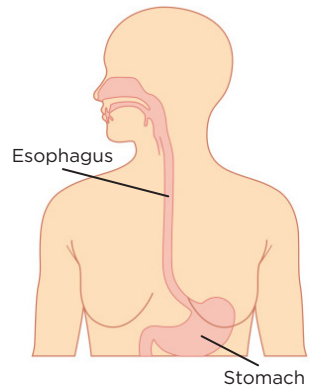
# Esophageal Cancer

- What is esophageal cancer?
- What are risk factors?
- Signs and symptoms
- Tests for esophageal cancer
- Stages of esophageal cancer
- Treatment options

## What Is Esophageal Cancer?

Esophageal cancer is a disease in which malignant (cancer) cells form in the tissues of the esophagus.

The esophagus is the hollow, muscular tube that moves food and liquid from the throat to the stomach. The wall of the esophagus is made up of several layers of tissue, including mucous membranes, muscle, and connective tissue. Esophageal cancer starts on the inside lining of the esophagus and spreads outward through the other layers as it grows.



The two most common forms of esophageal cancer are named for the type of cells that become malignant (cancerous).

**Squamous cell carcinoma** is cancer that forms in squamous cells, the thin, flat cells lining the esophagus. This cancer is most often found in the upper and middle part of the esophagus, but can occur anywhere along the esophagus.

**Adenocarcinoma** is cancer that begins in glandular (glands that secrete) cells. Glandular cells in the lining of the esophagus produce and release fluids such as mucus. Adenocarcinomas usually form in the lower part of the esophagus, near the stomach.

## What Are Risks for Esophageal Cancer?

Anything that increases your risk of getting a disease is called a risk factor. Having a risk factor does not mean that you will get cancer; not having risk factors does not mean that you will not get cancer. Risk factors include the following:

- Tobacco use
- Heavy alcohol use
- Older age
- Barrett's esophagus: A condition in which the cells lining the lower part of the esophagus have changed or been replaced with cells that are not normal. This can lead to cancer of the esophagus. Gastric reflux (the backing up of stomach contents into the lower section of the esophagus) may irritate the esophagus and, over time, cause Barrett's esophagus.

## Signs and Symptoms of Esophageal Cancer Are Weight Loss and Painful or Difficulty Swallowing.

These and other signs and symptoms may be caused by esophageal cancer or by other conditions. These are possible signs of the disease:

- Painful or difficult swallowing
- Weight loss
- Pain behind the breastbone
- Hoarseness and cough
- Indigestion and heartburn
- Bleeding or anemia

## Tests to Detect (Find) and Diagnose Esophageal Cancer. You May Not Need Every Test.

The following tests and procedures may be used:

- **Physical exam and history.**
- **Chest x-ray:** An x-ray of the organs and bones inside the chest. An x-ray is a type of energy beam that can go through the body and onto film, making a picture of areas inside the body.

- **Barium swallow:** A series of x-rays of the esophagus and stomach. The patient drinks a liquid that contains barium (a silver-white metallic compound). The liquid coats the esophagus and stomach, and x-rays are taken. This procedure is also called an upper GI series.
- **Esophagoscopy (also called EGD/Upper endoscopy):** A procedure to look inside the esophagus to check for abnormal areas. An esophagoscope is inserted through the mouth or nose and down the throat into the esophagus. An esophagoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove tissue samples, which are checked under a microscope for signs of cancer.
- **Biopsy:** The removal of cells or tissues so they can be viewed under a microscope by a pathologist to check for signs of cancer. The biopsy is usually done during an esophagoscopy. Sometimes a biopsy shows changes in the esophagus that are not cancer but may lead to cancer.

### **Certain Factors Affect Prognosis (Chance of Recovery) and Treatment Options.**

The prognosis (chance of recovery) and treatment options depend on the following:

- The stage of the cancer (whether it affects part of the esophagus, involves the whole esophagus, or has spread to other places in the body)
- Whether the tumor can be completely removed by surgery
- Your general health

When esophageal cancer is found very early, there is a better chance of recovery. Esophageal cancer is often in an advanced stage when it is diagnosed. At later stages, esophageal cancer can be treated but rarely can be cured.

# Stages of Esophageal Cancer

The process used to find out if cancer cells have spread within the esophagus or to other parts of the body is called staging. Information gathered determines the stage of the disease. It is important to know the stage in order to plan treatment.

The following tests and procedures may be used:

**Endoscopic ultrasound (EUS):** A procedure in which an endoscope is inserted into the body, usually through the mouth. A probe at the end of the endoscope is used to bounce high-energy sound waves (ultrasound) off internal tissues or organs and make echoes. The echoes form a picture of body tissues called a sonogram. This procedure is also called endosonography.

**CT scan (CAT scan):** A procedure that makes a series of detailed pictures of areas inside the body, such as the chest, abdomen, and pelvis, taken from different angles. The pictures are made by a computer linked to an x-ray machine. A dye may be injected into a vein or swallowed to help the organs or tissues show up more clearly. This procedure is also called computed tomography, computerized tomography, or computerized axial tomography.

**PET scan (positron emission tomography scan):** A procedure to find malignant tumor cells in the body. A small amount of radioactive glucose (sugar) is injected into a vein. The PET scanner rotates around the body and makes a picture of where glucose is being used in the body. Cancer cells show up brighter in the picture because they are more active and take up more glucose than normal cells do. Bright spots that are not cancer can occur, such as with an infection. A PET scan and CT scan may be done at the same time. This is called a PET-CT.

**MRI (magnetic resonance imaging):** A procedure that uses a magnet, radio waves, and a computer to make a series of detailed pictures of areas inside the body. This procedure is also called nuclear magnetic resonance imaging (NMRI).

**Thoracoscopy:** A surgical procedure to look at the organs inside the chest to check for abnormal areas. An incision (cut) is made between two ribs and a thoracoscope is inserted into the chest. A thoracoscope is a thin, tube-like instrument with a light and a lens for viewing. It may also have a tool to remove tissue or lymph node samples, which are checked under a microscope for signs of cancer. In some cases, this procedure may be used to remove part of the esophagus or lung.

**Laparoscopy:** A surgical procedure to look at the organs inside the abdomen to check for signs of disease. Small incisions (cuts) are made in the wall of the abdomen and a laparoscope (a thin, lighted tube) is inserted into one of the incisions. Other instruments may be inserted through the same or other incisions to perform procedures such as removing organs or taking tissue samples to be checked under a microscope for signs of disease.

## There Are Three Ways That Cancer Spreads in the Body.

Cancer can spread through tissue, the lymph system, and the blood:

- **Tissue:** The cancer spreads from where it began by growing into nearby areas.
- **Lymph system:** The cancer spreads from where it began by getting into the lymph system. The cancer travels through the lymph vessels to other parts of the body.
- **Blood:** The cancer spreads from where it began by getting into the blood. The cancer travels through the blood vessels to other parts of the body.

When cancer spreads to another part of the body, it is called metastasis. Cancer cells break away from where they began (the primary tumor) and travel through the lymph system or blood.

The metastatic tumor is the same type of cancer as the primary tumor. For example, if esophageal cancer spreads to the lung, the cancer cells in the lung are actually esophageal cancer cells. The disease is metastatic esophageal cancer, not lung cancer.

## TNM Staging

TNM staging provides some of the facts about the cancer.

- Part of cancer staging involves looking at the size or **T**(tumor).
- Another is the presence of cancer in the lymph nodes, or **N**.
- If the tumor has spread, (metastasized) that is referred to as **M**.

## The Grade of the Tumor Is Also Used to Describe the Cancer and Plan Treatment.

The grade of the tumor describes how abnormal the cancer cells look under a microscope and how quickly the tumor is likely to grow and spread. Grades 1 to 3 are used to describe esophageal cancer:

- **In grade 1**, the cancer cells look more like normal cells under a microscope and grow and spread more slowly than grade 2 and 3 cancer cells.
- **In grade 2**, the cancer cells look more abnormal under a microscope and grow and spread more quickly than grade 1 cancer cells.
- **In grade 3**, the cancer cells look more abnormal under a microscope and grow and spread more quickly than grade 1 and 2 cancer cells.

## The Following Stages Are Used to Describe Cancer of the Esophagus:

**Stage 0 (high-grade dysplasia):** In stage 0, abnormal cells are found in the layers of the esophagus wall. These abnormal cells may become cancer and spread into nearby normal tissue. Stage 0 is also called high-grade dysplasia.

**Stages I (1) II (2) or III (3):** Stages 1, 2, or 3 describe the involvement of cancer in the layers of the tissue, muscle or lymph node involvement and nearby organs.

**Stage IV (4):** In Stage IV, cancer has spread to other parts of the body.



## Recurrent Esophageal Cancer

Recurrent esophageal cancer is cancer that has recurred (come back) after it has been treated. The cancer may come back in the esophagus or in other parts of the body.

## Treatment Option Overview

Patients have special nutritional needs during treatment for esophageal cancer. Many people with esophageal cancer find it hard to eat because they have trouble swallowing. A Speech-Language Pathologist (SLP) can help plan your care and provide for the best outcome possible.

The esophagus may be narrowed by the tumor or as a side effect of treatment. Some patients may receive nutrients directly into a vein. Others may need a feeding tube until they are able to eat on their own. A Registered Dietitian Nutritionist can help advise you to meet your nutrition needs.

## Treatment for Patients With Esophageal Cancer

Different types of treatment are available for patients with esophageal cancer. Some treatments are standard (the currently used treatment), and some are being tested in clinical trials.

### Radiation Therapy

Radiation therapy is a cancer treatment that uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. There are two types of radiation therapy:

- **External radiation therapy** uses a machine outside the body to send radiation toward the cancer.
- **Internal radiation therapy** uses a radioactive substance sealed in needles, seeds, wires, or catheters that are placed directly into or near the cancer.

The way the radiation therapy is given depends on the type and stage of the cancer being treated. External and internal radiation therapy are used to treat esophageal cancer.

A plastic tube may be inserted into the esophagus to keep it open during radiation therapy.

## **Chemotherapy**

Chemotherapy is a cancer treatment that uses drugs to stop the growth of cancer cells, either by killing the cells or by stopping them from dividing.

- **Systemic chemotherapy:** when chemotherapy is taken by mouth or injected into a vein or muscle, the drugs enter the bloodstream and can reach cancer cells throughout the body.
- **Regional chemotherapy:** when chemotherapy is placed directly into the cerebrospinal fluid, an organ, or a body cavity such as the abdomen, the drugs mainly affect cancer cells in those areas.

## **Chemoradiation Therapy**

Chemoradiation therapy combines chemotherapy and radiation therapy to increase the effects of both.

## **Surgery**

Surgery is the most common treatment for cancer of the esophagus. Part of the esophagus may be removed in an operation called an esophagectomy.

The doctor will connect the remaining healthy part of the esophagus to the stomach so you can still swallow. A plastic tube or part of the intestine may be used to make the connection. Lymph nodes near the esophagus may also be removed and viewed under a microscope to see if they contain cancer. If the esophagus is partly blocked by the tumor, an expandable metal stent (tube) may be placed inside the esophagus to help keep it open.

Small, early-stage cancer and high-grade dysplasia of the esophagus may be removed by endoscopic resection. An endoscope (a thin, tube-like instrument with a light and a lens for viewing) is inserted through a small incision (cut) in the skin or through an opening in the body, such as the mouth. A tool attached to the endoscope is used to remove tissue.

## **Laser therapy**

Laser therapy is a cancer treatment that uses a laser beam (a narrow beam of intense light) to kill cancer cells.

## Electrocoagulation

Electrocoagulation is the use of an electric current to kill cancer cells.

## Targeted Therapy

Targeted therapy is a type of treatment that uses drugs or other substances to identify and attack specific cancer cells. Targeted therapies usually cause less harm to normal cells than chemotherapy or radiation therapy do. Monoclonal antibody therapy is a type of targeted therapy used in the treatment of esophageal cancer.

Monoclonal antibody therapy uses antibodies made in the laboratory from a single type of immune system cell. These antibodies can identify substances on cancer cells or normal substances that may help cancer cells grow. The antibodies attach to the substances and kill the cancer cells, block their growth, or keep them from spreading. Monoclonal antibodies are given by infusion. They may be used alone or to carry drugs, toxins, or radioactive material directly to cancer cells.

## Biologic Therapy

Biologic therapy is a treatment that uses your immune system to fight cancer. Substances made by the body or made in a laboratory are used to boost, direct, or restore the body's natural defenses against cancer. This type of cancer treatment is also called biotherapy or immunotherapy.

## Clinical Trials

Clinical trials are done to find out if new cancer treatments are safe and effective or better than the standard treatment.

People who take part in a clinical trial may receive:

- The standard drugs alone or
- The standard drugs plus the new treatment being studied

Many of today's standard treatments for cancer are based on earlier clinical trials. **Ask if there is a clinical trial right for you.**

Taking part in a clinical trial helps improve the way cancer will be treated in the future. Even when clinical trials do not lead to effective new treatments, they often answer important questions and help move research forward.

Some clinical trials only include people who have not yet received treatment. Other trials test treatments for those whose cancer has not gotten better. There are also clinical trials that test new ways to stop cancer from coming back or reduce the side effects of cancer treatment.

## **Follow-up Tests May Be Needed**

Some of the tests that were done to diagnose the cancer or to find out the stage of the cancer may be repeated. Some tests will be repeated in order to see how well the treatment is working. Decisions about whether to continue, change, or stop treatment may be based on the results of these tests.

Some of the tests will continue to be done from time to time after treatment has ended. The results of these tests can show if your condition has changed or if the cancer has recurred (come back). These tests are sometimes called follow-up tests or check-ups.

Support is available for coping with changes that may have happened as a result of cancer treatment. Your healthcare team can offer ideas as well as a plan of care for long-term follow-up.

## **To Learn More About Esophageal Cancer**

American Cancer Society  
<https://www.cancer.org/>

National Cancer Institute  
<https://www.cancer.gov/>

National Comprehensive Cancer Network Guidelines for Patients  
<https://www.nccn.org/patients/guidelines/cancers.aspx>

MedlinePlus  
<https://medlineplus.gov/>

## Common Questions

What does the pathology report say?

What is the stage of my cancer?

What are my goals for treatment?

What are my treatment choices?

What kind of support services are available for me about finances, emotions, spiritual questions, etc.?

My Health Care Team	Contact Information
Surgeon:	
Medical Oncologist:	
Radiation Oncologist:	
Primary Care Doctor:	
Navigator:	
Nurse:	
Registered Dietitian Nutritionist:	
Speech-Language Pathologist (SLP):	
Other:	





The content of this booklet was adapted from content originally published by the National Cancer Institute. PDQ® Adult Treatment Editorial Board. PDQ Esophageal Cancer Treatment. Bethesda, MD: National Cancer Institute. Updated <03/28/2018>. Available at: <https://www.cancer.gov/types/esophageal/patient/esophageal-treatment-pdq>